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Second dose of COVID-19 vaccine can be four months after the first, expert panel says

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PUBLISHED MARCH 3, 2021

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Nisha Yunus, a residential care aide at Providence Health Care is injected with a dose of the Pfizer-BioNTech COVID-19 vaccine by Christina Cordova, a regional immunization clinical resource nurse in Vancouver, on Dec. 15, 2020.

JENNIFER GAUTHIER/REUTERS

An expert panel that advises the federal government on vaccination has determined that second doses of COVID-19 vaccines can be given up to four months after the first, two sources say.

The shift from the National Advisory Committee on Immunization (NACI), which previously supported extending the interval between doses to no more than six weeks, would open the door for more people to receive their first vaccination while supplies are still limited. It would also lend support to other provinces to follow the new vaccine schedule B.C. adopted on Monday.

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The Globe and Mail is not identifying the sources, who are familiar with the NACI deliberations, because they are not authorized to speak publicly about the matter.

The manufacturers of the three vaccines currently approved for use in Canada do not recommend an interval of four months between shots, but Bonnie Henry, B.C.'s Provincial Health Officer, said she made the decision after discussions with NACI as well as a review of "real-world" data.

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The new target means B.C. has fast-tracked its vaccine schedule, and now expects all eligible adults will have the opportunity to get the first dose of a COVID-19 vaccine by the end of July, two months earlier than planned.

"We know that maximizing the benefit of a single dose for more people in British Columbia is going to get us to our post-pandemic goal," Dr. Henry said on Tuesday, "and is going to protect more people, keep more people from needing hospitalizations and prevent more people from dying."

Alberta Health Minister Tyler Shandro said on Tuesday his province is considering following B.C.'s lead, citing "fantastic evidence" from places like Britain and Quebec about the

effectiveness of the vaccines after a single dose. He said he expects to make an announcement soon, although the province hasn't yet decided the length of the interval between doses.

"It's going to give us an opportunity to get more people vaccinated more quickly," Mr. Shandro said during a news conference on Tuesday.

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Canada's chief science adviser, Mona Nemer, is challenging Dr. Henry to explain how she concluded the gap is safe. "I'm not aware of data that would support a four-month delay," Dr. Nemer said in an interview. "I think it would be really important to be transparent about the data that is forming the basis of the decision [and] to be transparent about what we don't know."

Experts say there are scientific reasons a longer interval between the initial and second dose — typically referred to as "prime" and "boost" — is not only acceptable but may be preferable.

Akiko Iwasaki, an immunologist at Yale University, said that after the first shot, the body produces both "effector" cells, which fight what they perceive to be an infection, and "memory" cells, which retain information about the infectious agent to enable long-term protection. "If you give the second dose too soon, you are mostly targeting the effector cells and not memory cells," Dr. Iwasaki said.

The intervals that the vaccine manufacturers settled on are relatively short compared with some other vaccines. Gary Kobinger, who specializes in vaccine development at Laval University, said that the urgency to produce a vaccine for COVID-19 would have led companies to compress the intervals between doses as much as possible to shorten the duration of the clinical trials.

Michael Houghton, a Nobel laureate and vaccine researcher at the University of Alberta, said evidence is already available that the AstraZeneca vaccine provides good protection at three months between doses, although he added that a four-month interval is "more of a calculated gamble."

In a medical journal commentary published in January, U.S. vaccine experts Stanley Plotkin and Neal Halsey recommended that the wait for second doses of the mRNA vaccines by Moderna and Pfizer-BioNTech — the only two that were authorized at the time — be extended several months if necessary to give single-dose protection to more individuals.

Dr. Plotkin, who is known for developing the rubella vaccine in the 1960s, told The Globe that “if British Columbia feels that it does not have sufficient supplies to get first doses into all susceptible people in less than four months, I would agree with the [province’s] strategy.”

Patricia Daly, Chief Medical Health Officer for Vancouver Coastal Health, said her region will reschedule thousands of people who were waiting for their booster shot to fit the new guidance. “Protection is robust after one dose,” she said on Tuesday. “This is in all age groups, including frail, elderly people in long term care. We believe that protection will be sustained until they get their second dose at 16 weeks, and from an ethical point of view, what that does is it frees up a lot more vaccines to be given as first doses.”

Ontario Health Minister Christine Elliott on Tuesday said her province was waiting on published guidance from NACI about extending dose intervals. “This would be a considerable change of course, if you can extend the vaccines for four months. That makes a huge difference. You [could] have more people be vaccinated, at least with the first dose, and with the variants of concern out there, this could make a significant difference for Ontario in reducing hospitalizations and deaths,” Ms. Elliott said.

A new research paper produced by Saskatchewan Health Authority concludes that extending the wait for the second shot to as much as 24 weeks “shows progressive benefit to population immunity.” The modelling suggests Saskatchewan could reach herd immunity four weeks faster with a 12-week spacing regimen, or 10 weeks faster if the booster were given after 24 weeks.

Quebec began delaying second doses for 90 days on Jan. 14 amid vaccine shipment delays. Pharmaceutical companies and some experts criticized the province for straying from the schedule set by the vaccine makers after clinical trials. Cases and deaths quickly plunged among the population that received the first dose, mainly health care workers and nursing home residents. The province started mass vaccination on Monday for people 70 and older and will stick to the 90-day schedule for now.

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